

Racial Similarities and Differences in Family Dental Care Patterns

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THE UNDER-UTILIZATION of health care services by blue-collar workers has been attributed to a variety of factors, including lack of sophistication in dealing with bureaucratic agencies and organizations, economics, lack of orientation toward the future, and prejudice on the part of health personnel (1). There is evidence that not only social class but also cultural factors have an effect on illness behavior (2). This paper focuses on a specific type of illness behavior, the utilization of dental care services.

Reports of a disparity in the use of dental services among various ethnic, racial, and socioeconomic groups have appeared in the literature. In general, low-income groups receive less dental care than upper-income groups (3-5). The U.S. National Health Survey (6) reported three times the average annual number of dental visits per person among whites (1.6 visits) than nonwhites (0.5 visits). Suchman and Rothman (7) in a 1965 New York City study reported that 49 percent of the whites had been to a dentist during the previous year, as com-

pared to 39 percent of the Puerto Ricans and 31 percent of the Negroes. They further stated that these differences continued to hold even when controlled on socioeconomic status, although they did not describe the methods used for this control. Wisan and co-workers (8), in a study of preschool children in Philadelphia, reported a significantly higher percentage of nonwhite children in need of dental treatment than white children.

Our study of dental care patterns in low-income families contradicts some of the previous findings and attempts to delineate some of the factors related to their low level of dental care, with particular emphasis on differences between Negro and white families.

Subjects and Methods

The subjects of this study consisted of a respondent from each of 646 families enrolled in Boston's Summer Head Start Program of 1967. This constituted an 83 percent sample of the 778-family total enrollment. Head Start is a child development program for disadvantaged preschool children which offers services to families who meet the financial eligibility requirements set by the Office of Economic Opportunity. The requirement is an annual income of \$1,500 or less for the first member of the family and an additional \$500 for each other family member. The local antipoverty agency and the school system apprised low-income families of the services offered by Head

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Start. Parents voluntarily enrolled their children in the 8-week program, which was held in 46 Head Start centers.

The participating families resided in low-income areas of the city. Their racial distribution (in rounded figures) was 59 percent white, 38 percent Negro, and 2 percent "other" (mainly Puerto Rican and Chinese). The "other" category is not included in our analysis of the data; thus the total sample size was 621. We were mainly interested in exploring differences between the two major groups (whites and Negroes).

The families consisted mostly of young parents, with the modal range of mothers' ages between 26-30 years and fathers' ages between 31-35 years; 232 respondents, or 35.9 percent, reported no father present in the home. The mean number of children per family was 4.5.

Fifty-five percent of the families were receiving financial assistance from a public agency, primarily in the category of Aid to Families with Dependent Children, and 44 percent were self-supporting.

The heads of the households were primarily blue-collar workers (54 percent), and the remainder were sales or white-collar workers (7 percent) and housewives or unemployed (39 percent). The median range of educational attainment of the head of the house was 10-11 years of schooling. Median income for the Negro population was in the range of \$3,000-\$3,999; for the white population, it was in the \$4,000-\$4,999 category. Demographic characteristics of the Negro and white subsamples are shown in table 1.

The research instrument used was a 5-page structured interview schedule consisting of 46 questions on dental service utilization by the respondent and all members of the family, dental health knowledge and attitudes of the respondent, and social and demographic variables.

Parts of the schedule had been pretested with the previous year's Head Start population and found to be answerable by the survey population. The results of the pretest also correlated well with national survey data for a similar income group.

The following are some of the questions asked. Do you have a dentist or dental clinic that you

usually go to for dental care? When was the last time you had any dental treatment of any kind? Do you remember what kind of work was done then? Did you go for one visit at that time or was it one of a series of visits? Were you having any trouble with your teeth at the time you decided to go to the dentist?

The interviewers, eight dental hygienists and three senior dental students, were given a 3-day orientation which included training in interviewing and familiarization with the interview schedule.

The interviews were obtained in the Head Start centers if the mother accompanied the child to class or in the home of the family if the mother was not available at the center. If an adult was not at home at the first visit, a return visit was made on a subsequent day. If no interview was obtained after these three attempts, the family was classified as "nonrespondent." The interviews were completed during a 6-week period from July to August 1967.

The responses to the questions were coded on data transfer sheets, and the material was subsequently punched on IBM cards for computer processing. Statistical significance was determined by chi-square with acceptance at the 0.05 level.

Results

Differences. There were a number of significant racial differences in patterns of dental care, as tables 2-4 indicate. For example, whites were more likely to have a regular source of dental care than Negroes. Of the respondents who had a regular source of care, Negroes were more

Table 1. Demographic characteristics of study population's 621 families, by race

Characteristics	Negro		White	
	Num- ber	Per- cent	Num- ber	Per- cent
Children per household...	4. 62	-----	4. 51	-----
Without male head of house.....	130	46. 7	184	28. 4
Receiving financial assistance.....	142	59. 4	200	53. 6
Type of occupation of head of house:				
Blue-collar worker....	117	50. 2	211	56. 7
White-collar worker...	11	4. 7	32	8. 6
Unemployed or housewife.....	105	45. 1	129	34. 7

Table 2. Differences¹ in patterns of dental care, by race

Variable	Negro		White	
	Num-ber	Per-cent	Num-ber	Per-cent
Have regular source of dental care.....	146	60.3	275	72.6
Type of facility used:				
Dental clinic.....	95	62.5	90	32.1
Private practitioner.....	57	37.5	190	67.9
Visited dentist before age 6.....	65	30.7	142	43.4
Last visit was one of a series of visits.....	115	50.0	230	63.0
Have a bridge or plate to replace missing teeth.....	60	26.9	187	53.0

¹ All differences significant at level of 0.01.

likely to go to a public clinic for their care and whites to a private dentist. White parents reported having had dental care at a younger age as children than Negro parents.

There were also significant differences between types of treatment received (table 2). Categories of treatment included prevention (examinations, X-rays, cleanings, and topical fluoride treatments), restorations (fillings or single crowns), extractions, and dentures. While prevention was similar in the two groups (approximately 8 percent) Negroes were more likely to have extractions and whites more likely to have restorations and dentures. The same pattern existed for the mother and father of the family and for the respondent, who was usually but not always the mother. Even when the dentures category is eliminated, the differences re-

main significant between the racial groups for "father" and "respondent" but not for "mother."

When differences in treatment were examined for children, the denture category was routinely eliminated, since only two children in the entire sample had dentures. No treatment differences existed for any of the three older children in the family or for the Head Start child. For the second-born child, differences approached significance at the 0.10 level, with the white child having more restorations, fewer extractions, and somewhat less preventive care.

Another difference relating to treatment was that Negro respondents were more likely to have had only one visit while white respondents were more likely to have had a series of visits the last time they went to the dentist.

When recency of last visit to the dentist was divided into the categories 0-12 months, 1-3 years, more than 3 years, and "never," there were no significant differences between the two racial groups for mother, father, respondent, or the Head Start child. However, regarding recency of last visit for the other children in the family, the results are inconsistent. The eldest white child had visited the dentist more recently than the eldest Negro child ($\chi^2=10.66$, $df=2$, $P<0.01$). There were no racial differences in recency of last visit for the second-born child, however, nor for the Head Start child, whose numerical position in the family was not known.

Based on the responses to the following six questions on dental health information, the dental health knowledge of the white group was found to be significantly higher than that of the Negro (table 4):

Table 3. Differences¹ in type of treatment received at last dental visit of the mother, father, and respondent, by race

Treatment	Mother				Father				Respondent			
	Negro		White		Negro		White		Negro		White	
	Num-ber	Per-cent	Num-ber	Per-cent	Num-ber	Per-cent	Num-ber	Per-cent	Num-ber	Per-cent	Num-ber	Per-cent
Preventive.....	17	8.3	28	8.7	6	7.2	31	15.4	17	8.2	25	7.6
Restorative.....	38	18.4	73	22.7	15	18.1	43	21.4	38	18.4	78	23.7
Extraction.....	128	62.1	146	45.3	55	66.3	89	44.3	130	62.8	151	45.9
Dentures.....	23	11.2	75	23.3	7	8.4	38	18.9	22	10.6	75	22.8

¹ Significant differences: mother— $\chi^2=17.45$, $df=3$, $P<0.001$; father— $\chi^2=11.27$, $df=3$, $P<0.02$; respondent— $\chi^2=14.69$, $df=3$, $P<0.01$.

1. No matter how well you take care of your teeth eventually you will lose them. (agree-disagree)

2. If you have a toothache which goes away by itself after a while, there is no need to see a dentist. (agree-disagree)

3. A child's first set of teeth are important and should be treated so as to keep them until they come out naturally. (agree-disagree)

4. The back teeth which a child gets at age 6 are baby teeth. (agree-disagree)

5. A person can always tell if there is something wrong with his teeth and gums (agree-disagree)

6. At what age do you think a child should be taken to the dentist for the first dental examination?

"High" knowledge means five or six questions were answered correctly, "medium" three or four answered correctly, and "low" zero to two correct.

The relationship between knowledge and behavior was also different for the two groups. The white person (respondent) who knows more about dental health is more likely to have a regular dentist ($\chi^2=6.46$, $df=1$, $P<0.02$), to go to a private dentist rather than a public clinic ($\chi^2=4.30$, $df=1$, $P<0.05$), and to have restorative dental treatment and dentures rather than extractions ($\chi^2=8.52$, $df=3$, $P<0.05$). There is no relationship between knowledge and having a regular dentist, private dentist, or type of treatment received for the Negro person.

Similarities. Approximately 81 percent of the respondents from each group said they were having trouble with their teeth the last time they went to the dentist. About 67 percent in each group (68.3 percent Negro and 66.5 percent white) visit a dentist only when they have a toothache. When asked if they ever go for a checkup when they have no toothache only 22 percent of the Negroes and 28 percent of the whites said "yes." These findings reveal a 9 percent discrepancy for the Negro respondents and a 5 percent discrepancy for the white respondents.

In both groups approximately 20 percent of the respondents had all their natural teeth. Significantly more whites (50 percent) than Negroes (25 percent) however, had a plate or bridge to replace missing teeth.

No differences were seen between Negroes and whites in the percentage of respondents who felt a current need for dental treatment (about 60 percent). Nor was there a difference in the percentage who had made a dental appointment

Table 4. Racial differences in dental health knowledge

Level of dental knowledge	Respondents ¹			
	Negro		White	
	Number	Percent	Number	Percent
Low.....	28	11.6	37	9.8
Medium.....	113	46.7	144	38.0
High.....	101	41.7	198	52.2
Total.....	242	100.0	379	100.0

¹ One Negro respondent did not answer the total set of 6 questions on dental knowledge.

NOTE: $X^2=6.95$, $df=2$, $P<0.05$.

within this group (about 25 percent, which constitutes about 12 percent of the total sample). When asked why they did not have an appointment, whites were more likely to say they could not afford treatment, while Negroes blamed their own negligence. A similar percentage of each group listed fear and lack of time as reasons for lack of treatment.

Current and childhood attitudes toward going to the dentist were also similar in the two racial groups (table 5). Respondents were categorized according to their first response to these questions: How did you feel about going to the dentist as a child? How do you feel now about going to the dentist? A slightly higher percentage of Negroes remembered liking to go to the dentist as children, but the overall differences are not significant.

Multivariate analysis. The effects of income, education, and public assistance (welfare) on Negro-white differences in the following areas were analyzed: (a) use of public versus private dental facilities, (b) having a regular source of dental care, (c) being treated in one visit versus a series of visits, (d) type of treatment received, (e) recency of last visit, and (f) degree of dental knowledge.

Income was divided into three categories: under \$3,000 a year, \$3,000-\$4,999, and more than \$5,000. An example of the kind of question for which we sought an answer in the data was: "Does the finding that Negro subjects are more likely to attend a public clinic for dental care, while white subjects are more likely to go to a private dentist, hold true at different income

levels within the population?" A partial coefficient for Goodman and Kruskal's gamma, described by Davis (9), was used to ask the questions statistically. The results previously reported in each of the six areas mentioned did not differ when income level was held constant.

Educational level was also divided into three categories for the analysis; 9 years or under, 10 to 11 years, and 12 years and over. The particular groupings were chosen to allow for an approximately equal number of subjects in each category or cell. The previously reported results in the six areas analyzed remained the same at different education levels.

When the dichotomous variable "receiving public assistance" (or not) was held constant, the Negro-white differences or similarities in the six areas remained as previously reported.

Thus the major findings reported in this study remain when controls are built in for income and educational differences and receipt of welfare.

Discussion

Unlike the findings of most previously published reports, the two racial groups in our study did not generally differ as to recency of their last dental visits. Suchman and Rothman (7) found that in New York, Negro and white adults did differ in the percentage who had visited a dentist during the previous year. Factors

Table 5. Racial similarities in attitudes toward going to the dentist

Attitudes	Negro		White	
	Num- ber	Per- cent	Num- ber	Per- cent
<i>Attitude as a Child</i>				
Liked.....	16	10.7	16	5.3
Neutral or "duty"....	41	27.3	78	25.8
Disliked.....	42	28.0	111	36.8
Pain or fear.....	51	34.0	97	32.1
Total.....	150	100.0	302	100.0
<i>Present Attitude</i>				
Like.....	10	4.3	14	3.8
Neutral or "duty"....	103	51.1	177	53.7
Dislike.....	50	21.3	73	19.9
Pain or fear.....	55	23.4	83	22.6
Total.....	218	100.0	347	100.0

responsible for these contrasting results may include differences in dental facilities in New York and Boston and differences in the populations with regard to income and education.

Our findings, however, are not necessarily in contradiction with the National Health Survey, which reported an average of three times as many annual visits to the dentist for whites as nonwhites. First, we are dealing with dentally aware persons to the extent that they volunteered their children for a dental Head Start program. Within this population it is not surprising that no racial difference was seen in recency of last visit for the adults in the study. Given these two similarities (volunteering for Head Start and recency of last visit) the differences which do appear in the overall pattern of dental care become particularly significant. Further, there are some indications that the racial differences reported are related to availability as well as to utilization of dental care.

Treatment. One difference in the pattern of care which emerged was that Negroes are more likely to go to a public clinic for treatment while whites go to a private dentist. The dentist-to-population ratio is as high in communities where residents are primarily Negro as it is in the lower income white communities of the Head Start program. The Negro's use of a public clinic may reflect his economic concerns, or it may be that he feels more comfortable in the anonymity of the clinic situation and more at ease with care which is specifically provided for "poor people."

Supporting the noneconomic explanations are the many studies which describe the Negro's problems of identification and his negative self-image. For example, Clark and Clark (10) have shown that by the age of 3 racial consciousness exists. Most Negro children choose white dolls in preference to black dolls, and some evidence shows that they themselves are black. Pettigrew (11) documents many instances of mental illness in Negro people centering around desires for and delusions of being white. Silberman (12) speaks of the Negro's feelings of inferiority and crushing sense of "nobodiness" which remain as a heritage of their slavery.

When an adult patient enters a dental care situation, the kind of treatment he receives differs with his race. Negroes are less likely

to have restorations, more likely to have extractions, and less likely to have dentures.

The dental clinic as a communication channel. To understand why these differences exist, it is important to explore the question of who determines what the dental treatment will be. One example is that of an institution making the decision. The dental clinic in the Boston City Hospital, surrounded by a large Negro population, offers only extraction services; no other treatment is provided. This is the clinic attended by the majority of our respondents who receive care at a public facility. In most instances, the patient who goes there knows that an extraction is the only treatment he can receive. The interaction is two way, however. The hospital is communicating to the surrounding community of potential patients when it offers this and only this service. The message which it sends out might be interpreted as "We think extractions are the only treatment you need" or "We provide you only with relief from suffering, not positive health care."

The clinic also sends out communications to other groups. Dental students from New England's dental schools rotate through the city hospital clinic as a part of their educational experience. The impressions which they receive at the clinic are that the patients there, who are poor and primarily Negro, do not care about their teeth. In small group meetings held by Moosbrucker, fourth-year dental students repeatedly stated that the patients at the city hospital wanted only to have their teeth "pulled" and were not interested in preserving them. (Unpublished manuscript by Moosbrucker, "Personality Patterns of Dental Students and the Dental School Experience," 1968).

We are not suggesting that the dental students are unaware of the hospital's policy of offering only extractions, but rather that they are unaware of the clinic's function as a communication channel. That is, the students do not consider that the clinic is sending out messages to the patients to the effect that extractions are the only care they need. The student perceives the patients as being solely responsible for their treatment decisions; he does not perceive that they may be influenced by the hospital.

Further implications of the hospital clinic's

policy have to do with the perpetuation of poor dental habits within the patient population. For example, Kriesberg and Treiman found that parents' preventive care is positively related to their children's preventive dental care (13). Metz and Richards (14) support these results and say that the relationship holds for all income and education groups. In our study, racial differences in types of treatment received by the parents were not present to a significant extent for the children. Our results do not contradict the studies cited, however, since we consider several types of treatment and present data for the population as a whole rather than individual parent-child relationships. It is possible that by offering only emergency or "crisis" care to the adult population, a pattern of dental care which is contradictory to good dental health may be passed on to the next generation.

There is a danger that future improvements in the dental care for low-income groups are being undermined as a result of students' exposure to a clinic which only extracts teeth. The danger is particularly acute since the attitudes of health workers are considered a serious barrier to health care for the poor (15).

Perhaps middle-class health professionals, based on their experiences in clinics and hospitals during their training period, unwittingly stereotype and categorize working-class people. The patient is not insensitive to the health workers' attitudes, and he may respond with the fatalistic uncooperative behavior appropriate to the role he is assigned (16).

Dental knowledge. The amount of our respondents' dental knowledge was related to having a regular dentist, going to a private dentist, and type of treatment received for whites but not for Negroes. This suggests that the barriers, other than lack of knowledge, which prevent the potential patient from obtaining good dental care are stronger for Negroes than for whites. Since attitudes toward going to the dentist and aspects of motivation, such as reasons for going and actually getting oneself there, are similar between racial groups, the knowledge finding further suggests that at least some of the barriers standing between the Negro potential patient and good dental care are external to the patient himself. The barriers may exist in the attitudes of health workers and health institu-

tions, as we have suggested, or they may exist in the economic differences cited.

Social patterns related to housing and employment may also affect patterns of dental care differentially. Negroes reported a shorter period of residence in their present home than whites ($\chi^2=26.1$, $df=4$, $P<0.001$), and while these more frequent moves may be based in part on personal preferences, economic pressures or urban redevelopment, or both, probably play a part as well.

Summary

The dental health behavior of low-income Negro and white families who had a preschool child enrolled in Boston's Head Start Program of 1967 was investigated by means of a structured interview with a respondent from the family.

Differences were found between the Negro and white families with respect to the variables of regular source of dental care, type of treatment received at last visit, one or a series of visits, replacement of missing teeth, and dental health knowledge. The white families were found to represent the positive aspects of dental health behavior for these variables; for example, they were more likely to have a regular dentist, to go for a series of visits, to have restorations or dentures rather than extractions, and to have replacements for missing teeth. If the Negro families had a regular source of dental care, it was more likely to be a public clinic rather than a private dentist.

There were also a number of similarities between racial groups for variables such as recency of last visit, current felt need for dental treatment, making an appointment when in need of care, and attitudes toward visiting a dentist.

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